



CHENMKO ENTERPRISE CO.,LTD

SURFACE MOUNT

N-Channel Enhancement Mode Field Effect Transistor

VOLTAGE 30 Volts CURRENT 8 Ampere

CHM453NZPT

Lead free devices

APPLICATION

- * Servo motor control.
- * Power MOSFET gate drivers.
- * Other switching applications.

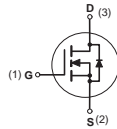
FEATURE

- * Small flat package. (SC-73/SOT-223)
- * High density cell design for extremely low R_{DS(ON)}.
- * Rugged and reliable.

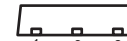
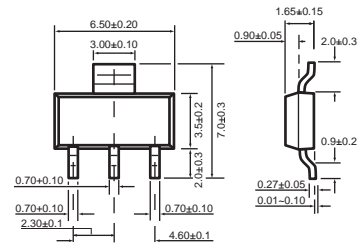
CONSTRUCTION

- * N-Channel Enhancement

CIRCUIT



SC-73/SOT-223



- 1 Gate
- 2 Source
- 3 Drain (Heat Sink)

Dimensions in millimeters

SC-73/SOT-223

Absolute Maximum Ratings T_A = 25°C unless otherwise noted

Symbol	Parameter	CHM453NZPT	Units
V _{DSS}	Drain-Source Voltage	30	V
V _{GSS}	Gate-Source Voltage	±20	V
I _D	Maximum Drain Current - Continuous	8.0	A
	- Pulsed (Note 3)	15	
P _D	Maximum Power Dissipation	3000	mW
T _J	Operating Temperature Range	-55 to 150	°C
T _{STG}	Storage Temperature Range	-55 to 150	°C

- Note : 1. Surface Mounted on FR4 Board , t <=10sec
- 2. Pulse Test , Pulse width <= 300us , Duty Cycle <= 2%
- 3. Repetitive Rating , Pulse width limited by maximum junction temperature
- 4. Guaranteed by design , not subject to production trsting

Thermal characteristics

R _{θJA}	Thermal Resistance, Junction-to-Ambient (Note 1)	42	°C/W
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RATING CHARACTERISTIC CURVES (CHM453NZPT)

Electrical Characteristics $T_A = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Conditions	Min	Typ	Max	Units
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OFF CHARACTERISTICS

BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS} = 0\text{ V}, I_D = 250\ \mu\text{A}$	30			V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = 24\text{ V}, V_{GS} = 0\text{ V}$			1	μA
I_{GSSF}	Gate-Body Leakage	$V_{GS} = 20\text{ V}, V_{DS} = 0\text{ V}$			+100	nA
I_{GSSR}	Gate-Body Leakage	$V_{GS} = -20\text{ V}, V_{DS} = 0\text{ V}$			-100	nA

ON CHARACTERISTICS (Note 2)

$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250\ \mu\text{A}$	1		3	V
$R_{DS(on)}$	Static Drain-Source On-Resistance	$V_{GS}=10\text{V}, I_D=8.0\text{A}$		24	28	m Ω
		$V_{GS}=4.5\text{V}, I_D=6.7\text{A}$		33	42	
g_{FS}	Forward Transconductance	$V_{DS} = 15\text{ V}, I_D = 8.0\text{ A}$	6	10		S

SWITCHING CHARACTERISTICS (Note 4)

Q_g	Total Gate Charge	$V_{DS}=15\text{V}, I_D=2\text{A}$ $V_{GS}=10\text{V}$		20	24	nC
Q_{gs}	Gate-Source Charge			3		
Q_{gd}	Gate-Drain Charge			6		
t_{on}	Turn-On Time	$V_{DD}= 25\text{V}$ $I_D = 1\text{ A}, V_{GS} = 10\text{ V}$ $R_{GEN} = 6\ \Omega$		10	15	nS
t_r	Rise Time			20	35	
t_{off}	Turn-Off Time			40	50	
t_f	Fall Time			35	50	

DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS

I_S	Drain-Source Diode Forward Current	(Note 1)			2.3	A
V_{SD}	Drain-Source Diode Forward Voltage	$I_S = 8\text{ A}, V_{GS} = 0\text{ V}$ (Note 2)			1.3	V